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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,993	08/03/2006	Patrick Lacroix-Desmazes	279742US0PCT	6577
22850 7590 08/20/2009 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER VALENROD, YEVGENY				
ART UNIT 1621		PAPER NUMBER		
NOTIFICATION DATE 08/20/2009		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/553,993

Applicant(s)

LACROIX-DESMAZES ET AL.

Examiner

YEVEGENY VALENROD

Art Unit

1621

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-19, 23 and 37-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-19, 23 and 37-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Rejection of claims 17-19, 23 and 37-44 under 35 USC 103(a) is withdrawn in view of applicants' remarks.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 17-19, 23 and 37-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The instant claims are directed to a process of preparing one or more iodinated organic substances. The meets and bound of the term "iodinated organic substances" is unclear. No structure of the substances that can be prepared by the claimed method is provided. It is therefore unclear how one skilled in the art would be able to determine which substances can be prepared using applicants method and which can't. The specification fails to provide further of the product that can be formed by the process. Examples 1-5 do not definitively describe the formed product and example 2-5 merely say that a substance according to invention is formed.

Claims 17-19, 23 and 37-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant describes one of the reagents as "organic substance comprising at least one ethylenic double bond, capable of adding a free radical to its ethylenic double bond". The description of the substrate is indefinite because it fails to provide one skilled in the art with a range of substrates that can be utilized in the claimed process. It is unclear how one is to judge when a substance is capable of adding a free radical to a double bond and when it's not capable. The claim does not require that a radical be added to a double bond, so a substance might be capable of forming a double bond, but not do so under the instant reaction conditions.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 17-19, 23 and 37-44 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue." These factors include, but are not limited to: (a) the nature of the invention; (b) the breadth of the claims; (c) the state of the prior art; (d) the amount of direction provided by the inventor; (e) the existence of working examples; (f) the relative skill of those in the art; (g) whether the quantity of experimentation needed to make or use the invention based on the content of the disclosure is "undue"; and (h) the level of predictability in the art (MPEP 2164.01 (a)).

Nature of the invention and Breadth of the claims:

The invention is directed to a process for producing one or more iodinated organic substances having a molecular mass of less than 2000 through reaction of an ethylenically unsaturated substrate with molecular iodine in the presence of a free radical generating substance. The claims are very broad with respect to the scope of starting material and product that can be produced by the claimed process. The starting material includes any substance under 2000 MW that comprises a double bond while the product comprises an indefinite number of substances. No limiting generic structure for the product or the starting material is provided.

State of the prior art and level of predictability in the art:

If one is to assume that the claimed process proceeds via a free radical mechanism, the level of predictability is very uncertain. Free radical reactions are well known to be substrate dependent as they tend to proceed via numerous propagation

steps often resulting in formation of numerous byproducts and unexpected products. For example Perret et al. (already of record) use the same ingredients as the applicant however their major product is not an iodinated substance.

With regard to the probable outcome of the claimed process, one skilled the art has not been provided with means of determining in which situations should the claimed process be utilized. I.e. which products can be formed by the process and which starting materials should be used to prepare the desired product.

Amount of direction provided by the inventor and existence of working examples:

Specification includes examples 1-5 which according to applicant describe the instant invention in more detail. However the examples fail to disclose specific starting material being made into specific products. Example 1 described a reaction of styrene with di-tertbutyl peroxide and molecular iodine in benzene. After the reaction is complete the product is described as:

"the reaction produced organic substances having a number average molecular mass of 299, very close to that of the compound corresponding to the formula $(CH_3)C-O(CH_2-CHPh);$,"

The above description does not actually describe what was made. The described formula has a specific molecular weight which is 303. Either the said compound was made in which case one would see a molecular ion peak corresponding to the MW of the product or it was not made, in which case that ion peak is not present. In addition the described formula is not a limiting structure. There is no indication where iodine is attached to the structure.

The structure provided as $A(\text{CH}_2\text{-CHPh})_n\text{-I}$ is also not limiting and is indefinite. Since A is a tert-butoxy group. How do numerous $\text{CH}_2\text{-CHPh}$ substituents connect to it? Is it an the only valency in the t-butoxy group is the oxygen atom, but the oxygen atom can only accommodate one substituent (i.e. $n=1$) how are more than one substituent attached?

The other examples 2-5 only indicate that a product according to the invention was formed. What is this product? Is it also $(\text{CH}_3)\text{C-O}(\text{CH}_2\text{-CHPh})\text{I}$?

Relative skill of those in the art and quantity of experimentation needed to make or use the invention: Although the relative level of skill in the art is high, one of ordinary skill would not be able to practice the instant invention because one has no means to determine when to actually use the instant invention. Without guidance as to what product one can expect to form, the amount of experimentation that is involved in practicing the invention is very large. The experimentation requires first theorizing as to which products can be made using the invention, then determining the conditions for the process, and experimenting with various reagents, starting materials and conditions. This amount of experimentation is well being what would be considered within the scope of skill of those of ordinary skill in the art.

Thus, given these considerations, one of ordinary skill in the art clearly would not be able to practice the claimed method such that it can be used as contemplated in the specification without first engaging in substantial and undue experimentation. Therefore, the claims are rejected under 35 U.S.C. §112, first paragraph, as lacking an enabling disclosure.

Conclusion

Claims 17-19, 23 and 37-44 are pending

Claims 17-19, 23 and 37-44 are rejected

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yevgeny Valenrod whose telephone number is 571-272-9049. The examiner can normally be reached on 8:30am-5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Sullivan can be reached on 571-272-0779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yevgeny Valenrod/

Yevgeny Valenrod
Patent Examiner

Application/Control Number: 10/553,993

Page 8

Art Unit: 1621

Technology Center 1600

/Paul A. Zucker/

Primary Examiner, Art Unit 1621